Legal Description of Dredged Material Management Area DU-9

A PARCEL OF LAND LYING IN SECTIONS 19, 30, 39, AND 40, TOWNSHIP 3 SOUTH, RANGE 29 EAST, ST. JOHNS COUNTY, FLORIDA; BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

FOR A POINT OF REFERENCE, COMMENCE AT A NORTHWEST CORNER OF ST. JOHNS COUNTY, SAID POINT ALSO BEING ON THE WESTERLY LINE OF SECTION 38 INTERSECTED BY THE SOUTHERLY DUVAL COUNTY AND THE NORTHERLY ST. JOHNS COUNTY LINE; THENCE SOUTH 00°37'25" EAST ALONG THE WESTERLY LINE OF SAID ST. JOHNS COUNTY LINE, RANGE 29 EAST AND THE EASTERLY LINE OF DUVAL COUNTY, RANGE 28 EAST, A DISTANCE OF 1271.86 FEET TO A SIX (6) INCH ROUND CONCRETE AND BRASS CAP MONUMENT, (DUVAL/ST. JOHNS, GHH/JED AS NOTED); THENCE SOUTH 00°37'35" EAST, A DISTANCE OF 1400.05 FEET TO A FOUR (4) BY FOUR (4) INCH CONCRETE MONUMENT, (LB# 1048 AS NOTED); THENCE SOUTH 00°37'48" EAST, A DISTANCE OF 2070.72 FEET TO A HALF(1/2) INCH IRON PIPE, (LB# 1048 AS NOTED); THENCE SOUTH 00°36'54" EAST, A DISTANCE OF 201.03 FEET TO A SIX (6) INCH ROUND CONCRETE AND BRASS DISK MONUMENT, (DUVAL/ST. JOHNS JED AS NOTED); THENCE SOUTH 00°37'38" EAST, A DISTANCE OF 227.19 FEET TO A FOUR (4) BY FOUR (4) INCH CONCRETE MONUMENT, (LB# 3624 AS NOTED); THENCE SOUTH 00°36'27" EAST, A DISTANCE OF 148.42 FEET TO A HALF (1/2) INCH IRON PIPE; THENCE SOUTH 01°00'32" EAST, A DISTANCE OF 3330.60 FEET TO A POINT ON SAID WESTERLY LINE OF ST. JOHNS COUNTY, RANGE 29 EAST AND THE EASTERLY LINE OF DUVAL COUNTY, RANGE 28 EAST; THENCE NORTH 76°11'25" EAST DEPARTING FROM SAID COUNTY LINE, A DISTANCE OF 1409.57 FEET TO THE POINT OF BEGINNING;

THENCE CONTINUING NORTH 76°11'25" EAST, A DISTANCE OF 2376.92 FEET; THENCE SOUTH 01°11'25" WEST, A DISTANCE OF 2400.00 FEET; THENCE SOUTH 32°50'52" EAST, A DISTANCE OF 1476.85 FEET; THENCE SOUTH 70°11'25" WEST, A DISTANCE OF 2249.82 FEET; THENCE NORTH 13°48'35" WEST, A DISTANCE OF 3949.46 FEET TO THE POINT OF BEGINNING.

CONTAINING 179.99 ACRES MORE OR LESS.

SAID LANDS SITUATE, LYING, AND BEING IN ST. JOHNS COUNTY, FLORIDA.

OFFICIAL RECORDS BOOK 208, PAGE 578-582

Source: Boundary Survey Performed by St. John's Survey Company
Project No. 250-021 Revision B
7/8/94

TABLE 1 (Page 1 of 2)

PROJECT IMPACT SUMMARY

WL & SW ID	WL & SW TYPE	WL & SW SIZE (AC.) ON SITE	WL & SW (AC.) NOT IMPACTED	PERMANENT WL & SW IMPACTS		TEMPORARY WL & SW IMPACTS		MITIGATION ID
				IMPACT SIZE	IMPACT	IMPACT	IMPACT	
1	641	0.273	0.273					
2	643	0.851	0.851					
3	615	0.551	0.551					
4	615	0.330	0.330					
5	621	0.464	0.464					
6	621	0.373	0.373					
7	615	2.494	2.494					
8	621	1.792	0	1.792	F			
9	621	0.788	0	0.788	F/H			
PROJECT TOTALS:								

WL = Wetland; SW = Surface water; ID = Identification number, letter, etc.
Wetland Type: Use an established wetland classification system and, in the comments section below, indicate which classification system is being used.
Impact Code (Type): D = dredge; F = fill; H = change hydrology; S = shading; C = clearing; O = other. Indicate the final impact if more than one impact type is proposed in a given area. For example, show F only for an area that will first be demucked and then backfilled.

Note. Multiple entries per cell are not allowed, except in the "Mitigation ID" column. Any given acreage of wetland should be listed in one row only, such that the total of all rows equals the project total for a given category (column). For example, if Wetland No. 1 includes multiple wetland types and multiple impact codes are proposed in each type, then each proposed impact in each wetland type should be shown on a separate row, while the size of each wetland type found in Wetland No. 1 should be listed in only one row.

Comments: Wetland type classified according to Florida Land Use, Cover, and Forms Classification -- 615 = Stream and Lake Swamp, 621 = Cypress, 641 = Freshwater Marsh, 643 = Wet Prairie. Wetland areas from COE Wetland Jurisdictional Survey, File No. 8E-37,788. Wetland types from "Environmental Site Documentation for Dredged Material Disposal Areas in St. Johns County - Pablo Creek Alternative 2 Site (Extended Southerly)", Water and Air Research, Inc., 1992.

FORM #: [illegible] (1)
FORM TITLE: JOINT ENVIRONMENTAL RESOURCE PERMIT APPLICATION
DATE: October 3, 1995

TABLE 1 (Page 2 of 2)
PROJECT IMPACT SUMMARY

WL & SW ID	WL & SW TYPE	WL & SW SIZE (AC.) ON SITE	WL & SW (AC.) NOT IMPACTED	PERMANENT WL & SW IMPACTS		TEMPORARY WL & SW IMPACTS		MITIGATION ID
				IMPACT SIZE	IMPACT	IMPACT	IMPACT	
10	621	0.308		0.308	F/H			
11	611	0.240		0.240	F			
PROJECT TOTALS:				3.128				

WL = Wetland; SW = Surface water; ID = Identification number, letter, etc.
Wetland Type: Use an established wetland classification system and, in the comments section below, indicate which classification system is being used.
Impact Code (Type): D = dredge; F = fill; H = change hydrology; S = shading; C = clearing; O = other. Indicate the final impact if more than one impact type is proposed in a given area. For example, show F only for an area that will first be demucked and then backfilled.

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Comments: _____

Table 2. Species to be Planted in DU-9 Mitigation Area

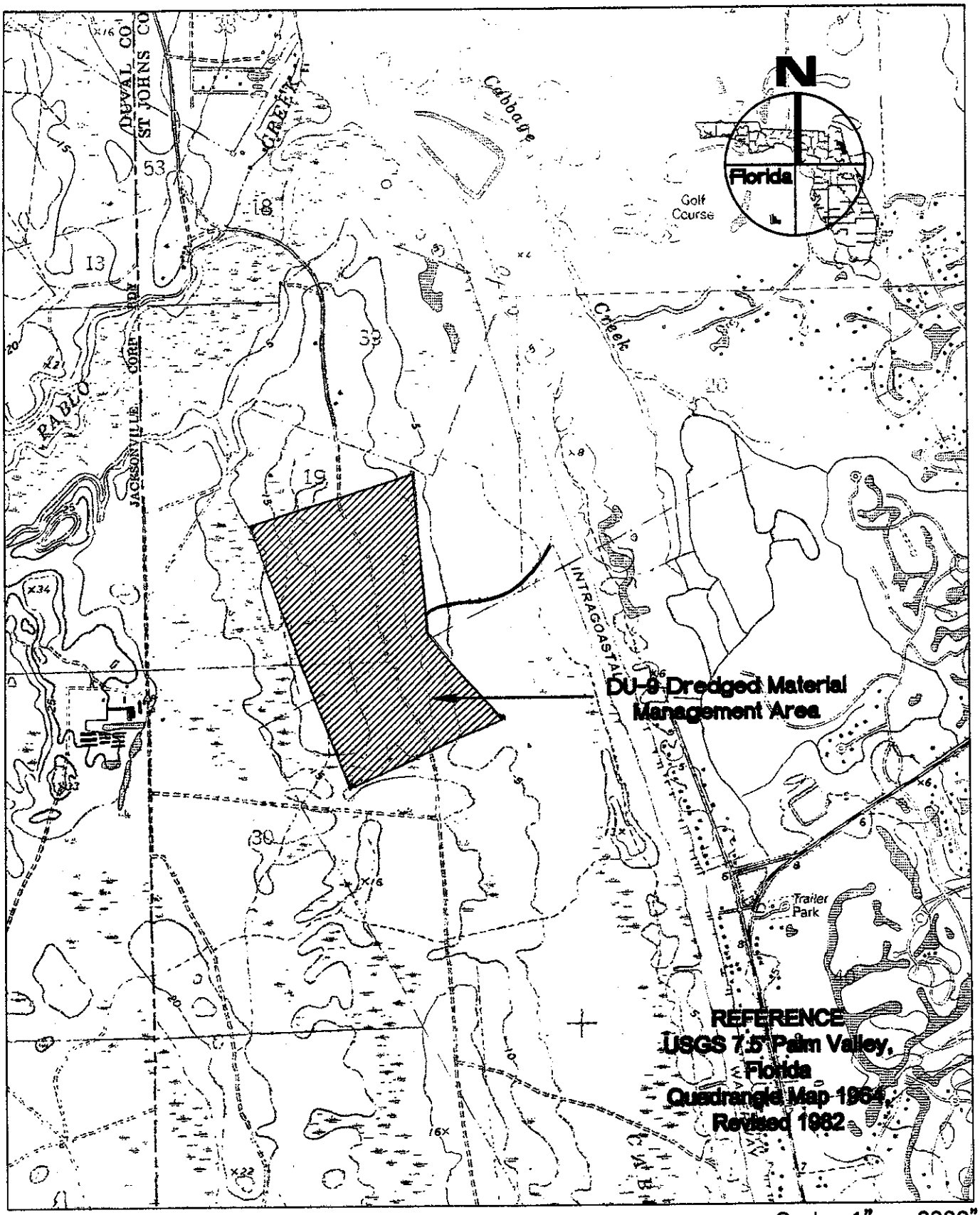
Common Name	Scientific Name	Plant Size	Range of Elevation [1, 2]	Density [3]	Source [4]
Bald cypress	*Taxodium distichum*	4 – 6'	+13.5 – 14.5'	100	Nursery
Pond cypress	*Taxodium ascendens*	4 – 6'	+13.5 – 14.0'	100	Nursery
Red maple	*Acer rubrum*	4 – 6'	+13.5 – 14.5'	50	Nursery
Swamp tupelo	*Nyssa sylvatica var. biflora*	4 – 6'	+13.5 – 14.5'	100	Nursery
Loblolly bay	*Gordonia lasianthus*	4 – 6'	+13.5 – 14.5'	40	Nursery
Swamp bay	*Persea palustris*	4 – 6'	+13.5 – 14.0'	30	Nursery

[1] Planting elevations referenced to NGVD

[2] Specific planting elevations to be field determined

[3] Planting density in terms of plants per acre

[4] Plant nursery to be determined by contractor



Scale: 1" = 2000"

TAYLOR ENGINEERING INC.
9000 CYPRESS GREEN DRIVE, SUITE 200
JACKSONVILLE, FLORIDA 32256

Figure 1
Location of DU-9
Dredged Material Management Area
St. Johns County, Florida

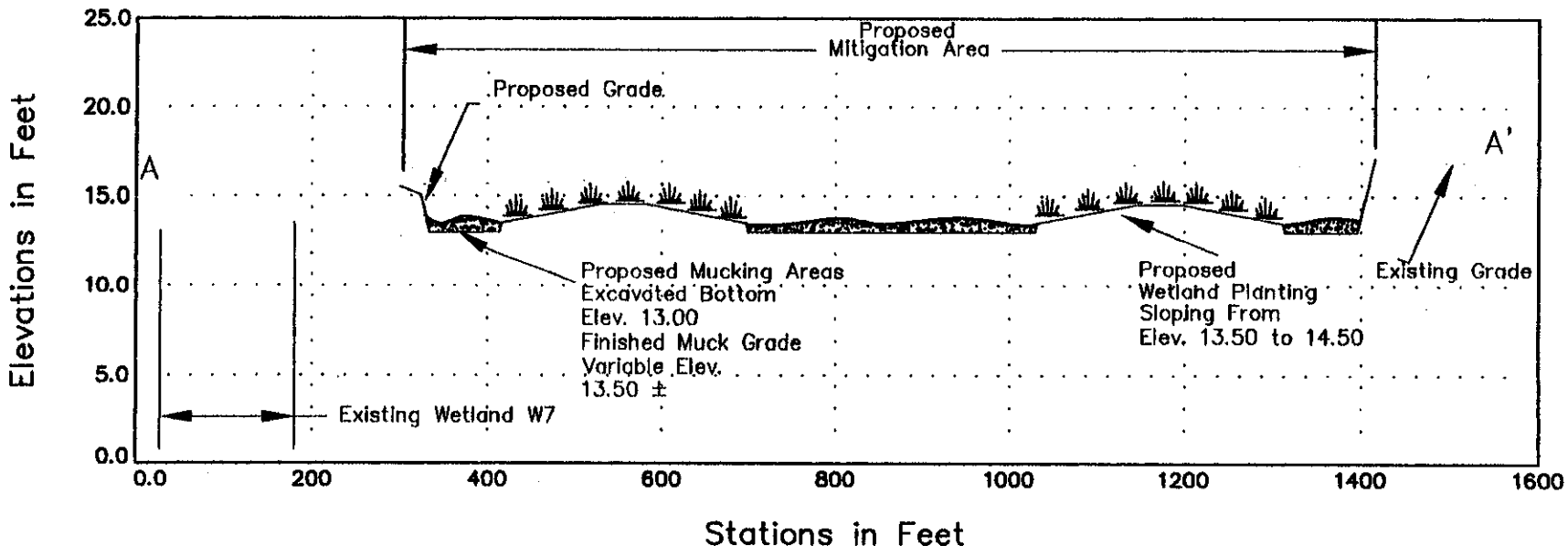
PROJECT	C9832
REVISION	
SHEET	
DATE	Nov. 1999

TAYLOR ENGINEERING INC.
9000 CYPRESS GREEN DRIVE, SUITE 200
JACKSONVILLE, FLORIDA 32256

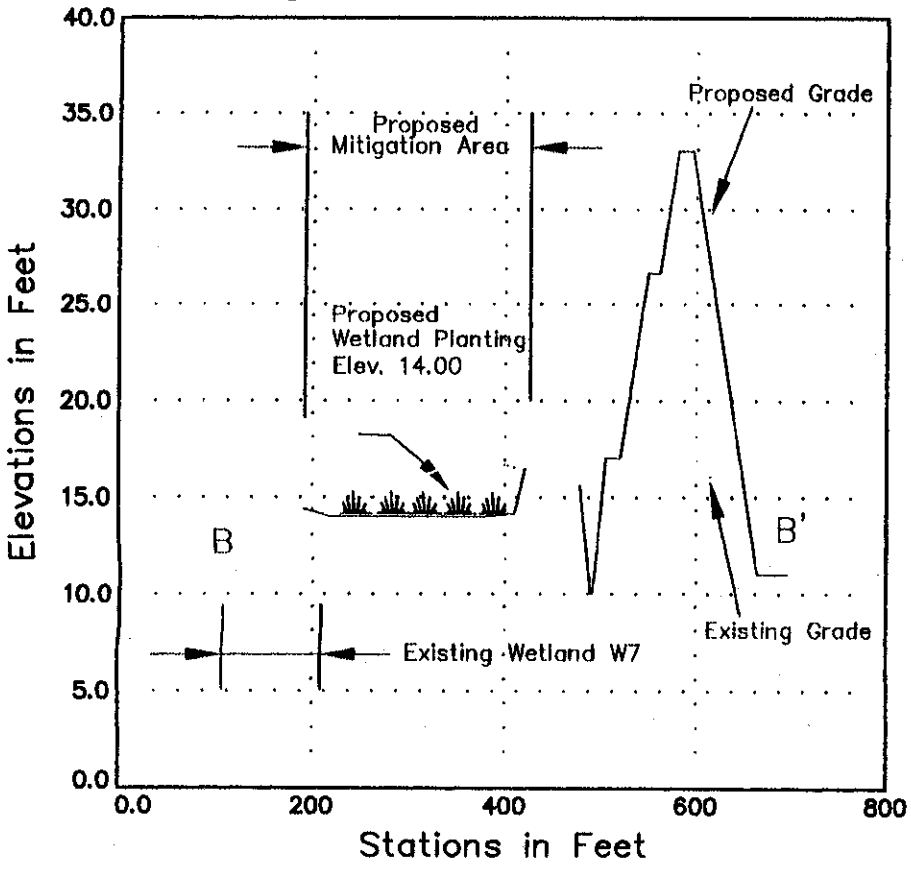
Figure 2
Wetlands and Proposed Mitigation
on DU-9 Dedged Material Management Area

PROJECT	C9832
DRAWN BY	
SHEET	
DATE	Nov. 1999

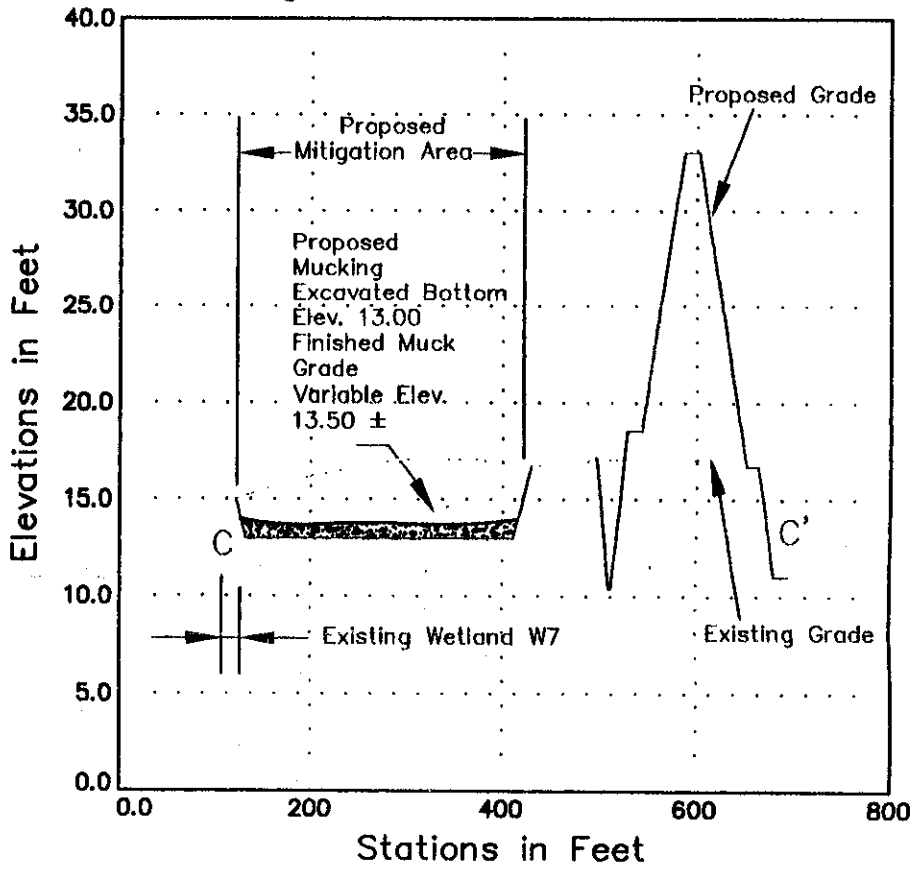
Mitigation Area M1: Section AA'



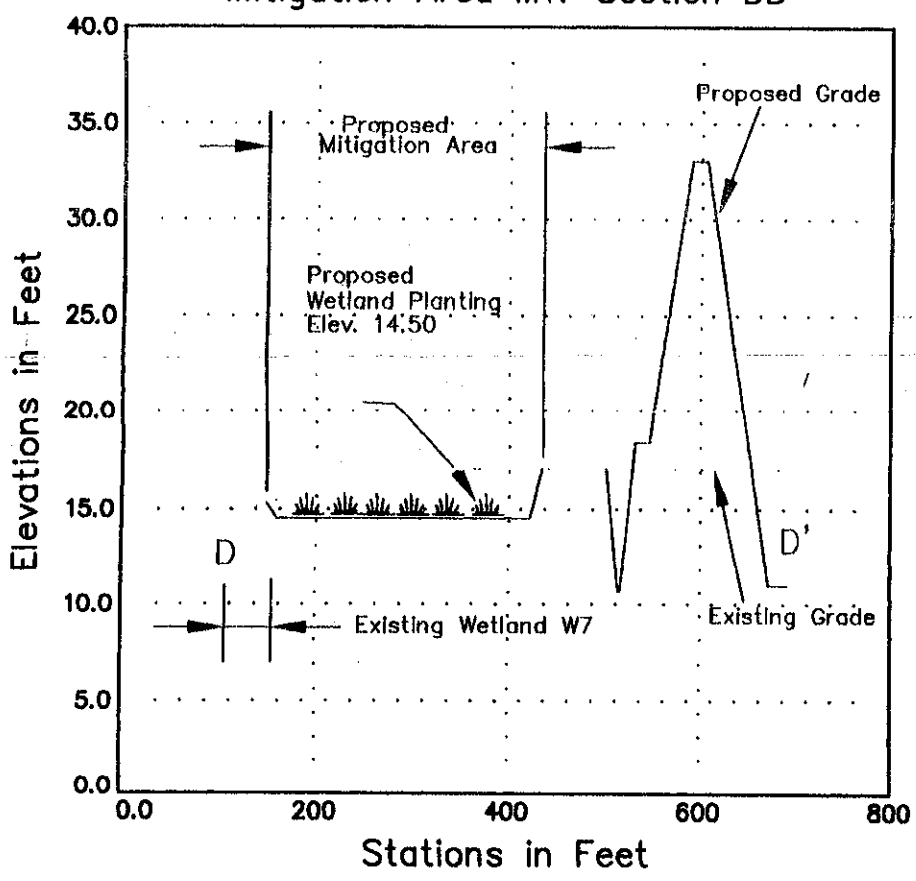
Mitigation Area M1: Section BB'



Mitigation Area M1: Section CC'



Mitigation Area M1: Section DD'



Species To Be Planted

Common Name	Scientific Name	Range of[1,2] Elevation	Density[3]
Bald Cypress	*Taxodium distichum*	+13.5–14.5'	100
Pond Cypress	*Taxodium ascendens*	+13.5–14.0'	100
Red Maple	*Acer rubrum*	+13.5–14.5'	50
Swamp Tupelo	*Nyssa sylvatica var. biflora*	+13.5–14.5'	100
Loblolly Bay	*Gordonia lasianthus*	+13.5–14.5'	40
Swamp Bay	*Persea palustris*	+13.5–14.0'	30

1. Planting elevations referenced to NGVD
2. Specific planting elevations to be field determined
3. Planting density in terms of plants per acre

Notes

1. Planting covers 50% of mitigation area.
2. All tree saplings 4'–6' in size.
3. All saplings planted on 10' centers.

TAYLOR ENGINEERING INC.
9000 CYPRESS GREEN DRIVE, SUITE 200
JACKSONVILLE, FLORIDA 32256

Figure 4
Section Views
of DU–9 Mitigation Area

PROJECT C9832
DRAWN BY J.A.
SHEET
DATE Oct., 1999

December 20, 1999

Ms. Lauren P. Milligan, Environmental Specialist
Florida Department of Environmental Protection
Bureau of Beaches and Coastal Systems
Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

RE: DU-9 Dredged Material Management Area
Application No: 0129250-001-EI (formerly File No. 552962379)

Dear Ms. Milligan:

This letter is in response to your December 8, 1999, request for additional information (RAI) for the above referenced Environmental Resource Permit application for the DU-9 Dredged Material Management Area. The revised mitigation plan (Attachment A) and associated figures contain all revisions requested in the referenced RAI. For your convenience, this revised plan replaces our previous submittal in its entirety.

The enclosed information addresses the RAI items 8 through 11 concerning the Project Mitigation Plan.

Item 8. *Please submit a detailed mitigation plan for the proposed project, using the attached ERP Mitigation Proposal Format as a guide.*

Response: See Attachment A.

Item 9. *Please provide scaled plan view and cross-sectional drawings showing the existing grades in the mitigation site and proposed final elevations (including mucking). The plan view drawing should depict the grades in one-foot contours and both should reference ordinary low water and ordinary high water on-site. We will need drawings that can be easily copied (no light colors) or provide multiple copies for distribution.*

Response: See Attachment A, Figures 3 – 4.

Item 10. *Please describe the mucking, grading, mulching, planting, and vegetation monitoring plans. Will the planted areas be mulched for stabilization and to prevent desiccation?*

Response:

Mucking

Hydric soils from the impacted wetlands will be excavated to a depth of 6 to 8 in. The collected material will be relocated to the mitigation site and spread on the surface of the unplanted areas.

Grading

The mitigation area will be excavated to a depth of +13.0 ft NGVD in the unplanted areas and +13.5 ft to +14.5 ft NGVD in the planted areas. Final elevations including mucking in the unplanted areas will be about +13.5 ft NGVD. Final elevations in the planted areas will range from +13.5 ft to +14.5 ft NGVD.

Planting

Native wetland trees (see Attachment A, Table 2) will be planted in 50% of the mitigation area. Planting elevations will range from +13.5 ft to +14.5 ft NGVD. All tree saplings planted will range from 4 to 6 feet in height. Trees will be planted on approximate 10 ft centers and at a density of 450 trees per acre with a goal of establishing 400 trees per acre. Unplanted areas will be allowed to revegetate by natural recruitment.

Mulching

Desirable trees cleared from the impacted wetlands will be chipped, stockpiled, and spread (approximately 3 in.) in the planted areas following the planting stage of the mitigation to provide stability and prevent desiccation.

Vegetation Monitoring

Three permanent sampling transect lines will be established to monitor planted and recruited vegetation. Sampling transects will extend longitudinally within the mitigation area. Permanent markers (i.e. PVC pipe) will be used to identify these lines for sampling consistency. All of the planted trees located within 20 ft of either side of each transect line will be sampled. Data collected will include each tree's total height, basal diameter, general condition, and water depth at each tree. Recruited vegetation will be observed and percent cover noted. Photographs will be taken to document the condition and appearance of the mitigation wetland. Annual inspections will continue for a period of 3 years following initial planting. Mitigation will be deemed successful if, after a three-year period, the planted vegetation exhibits 80% survival and the unplanted area exhibits at least 80% cover by desirable wetland species.

Item 11. *Please describe long-term management plans for maintaining the mitigation wetlands. Please indicate on the plan view map the area to be maintained free of exotics (at a minimum, the western half of the site in the remaining buffer zone).*

During construction of the mitigation area, exotic vegetation, primarily Chinese tallow (*Sapium sebiferum*), will be removed from the area west of the western containment basin construction boundary and extending north and south to the site boundary and east to about 150 ft beyond existing wetlands (see Figure 4). The vegetation removal will reduce exotic seed stock and minimize exotic recruitment in the mitigation area. During annual site inspections, the need for further exotic removal will be determined. If necessary following inspections, exotic vegetation will be removed by hand clearing and herbicide treatment. As noted in our November 18, 1999 submittal, the FIND will revise the DU-9 site management plan to include long-term mitigation area maintenance.

The mitigation area is located within the natural buffer area of the DU-9 site and will not be disturbed. If mitigation success criteria have not been met within the given time frame, we will develop modifications to the mitigation plan in consultation with the FDEP.

I believe this response addresses the remaining issues in your last request for additional information. Please contact me at (904)731-7040 with any questions about this response.

Sincerely,

Steven J. Schropp, Ph.D.
Principal Scientist

:bls

Attachments

cc: David Roach
Paul Stodola

ATTACHMENT A

MITIGATION PROPOSAL FOR DREDGED MATERIAL MANAGEMENT AREA DU-9 ST. JOHN'S COUNTY, FLORIDA

1. *Applicant Name* David K. Roach
   Title Executive Director, Florida Inland Navigation District
   Address 1314 Marcinski Road
   Jupiter, Florida 33477
   Telephone (561) 627-3386
   Fax (561) 624-6480

   Agent Name R. Bruce Taylor, Ph.D., P.E.
   Title President, Taylor Engineering, Inc.
   Address 9000 Cypress Green Drive, Suite 200
   Jacksonville, Florida 32256
   Telephone (904) 731-7040
   Fax (904) 731-9847

2. *Application No.* DEP: 0129250-001-EI (formerly File No. 552962379)

3. *Mitigation Goals*

   a. *Adverse impacts that must be offset to yield a permittable project. Include a list of type(s) of waters adversely affected, acreage(s) of and functions provided by each type.*

   The construction of DU-9 will impact a total wetland area of 3.13 acres. The types of wetlands impacted include 2.89 ac. of cypress (621) and 0.24 ac. of bay swamp (611) as defined by the Florida Land Use, Cover and Forms Classification System (FLUCCS). The expected impacts resulting from construction include filling these areas and, in some cases, changing the natural hydrology (see Table 1).

   b. *Proposed mitigation to offset unpermittable adverse impacts:*

   On-site wetland creation.

   Proposal Description

   The DU-9 mitigation plan involves creating 6.3 acres of wetland area on the northwestern side of the property (see Figure 2). The mitigation area will be excavated to elevations typical of the existing on-site wetlands. Native trees will be planted in 50% of the mitigation area. The remaining 50% will be allowed to revegetate by natural recruitment. The target types for the wetlands to be created are cypress (FLUCCS code 621) and bay swamp (FLUCCS code 611). The mitigation area lies adjacent to an existing wetland area classified as stream and lake swamp (FLUCCS code 615).

   c. *Area(s) of impact requiring mitigation:* 3.13 ac. or 136,343 sq. ft.

   Created: 6.3 ac. or 274,428 sq. ft.

d. *Ecological type and functions to be created, enhanced, or preserved.*

The target ecological types of wetlands to be created are cypress (FLUCCS code 621) and bay swamp (FLUCCS code 611).

e. *Is this mitigation project being required by another agency? If so, please indicate which agency(s) and the specific impact sites for which it is being applied.*

This mitigation plan will also satisfy the U.S. Army Corps of Engineers mitigation responsibilities for DU-9.

4. *Proposal Specifics*

a. *Please attach a schedule for implementation of the mitigation project. The schedule must include all aspects of the mitigation work: earthwork, planting, mulching, structure installation, periodic maintenance during establishment, etc.*

Mitigation, including all earthwork and planting, will occur concurrently with the DU-9 containment basin construction. Construction is anticipated to begin in the summer of 2000.

b. *Species present or to be planted.*

See Table 2.

c. *Describe earthwork (excavated, mulched, etc.)*

Wetland creation will include clearing the existing vegetation, excavating the existing soil, recontouring, and planting 50% of the area with native wetland vegetation. The mitigation area will be excavated to an elevation of +13.0 ft NGVD in unplanted areas and +13.5 ft to +14.5 ft NGVD in planted areas. Hydric soils from the impacted wetlands will be excavated to a depth of 6 in. and spread evenly on the unplanted areas. With the addition of the hydric soils, final elevations in the unplanted areas will be about +13.5 ft NGVD. Desirable trees cleared from the impacted wetlands will be chipped, stockpiled, and spread (approximately 3 in) in the planted areas following the planting stage of the mitigation to provide stability and prevent desiccation.

Proposed range of wetlands in NGVD:

+13.5 ft to +14.5 ft

Plan and cross-sectional drawings nos.:

See Figures 3 and 4.

SCS soil type(s) to be excavated:

The USDA Soil Conservation Service (SCS) Soil Survey for St. John's County indicated that the soil type to be excavated from the mitigation area is Zolfo fine sand (soil no. 8). This soil, somewhat poorly drained, has an estimated seasonal high groundwater level ranging from 2.0 to 3.5 ft below the ground surface.

According to the SCS Soil Survey, the soils to be excavated from the impacted wetlands are Wesconnett fine sand (soil no. 30) and Myakka fine sand (soil no. 3). Both soils are very poorly drained with an estimated seasonal high groundwater level ranging from 0 to 1 ft.

Soil borings. Describe subsoil characteristics in strata that will become surficial substrate, including grain size characteristics and water table proximity.

Soil characteristics of the mitigation area can be inferred from a boring taken about 100 ft from the southeast corner of the mitigation site boundary. According to the Soil Survey for St. John's County, the boring location falls within the same soil type as the mitigation area. Surface soils to a depth of approximately 2 ft are described as fine to medium grain sand, predominantly fine grain, with trace gravel. From 2 to 4 ft, the soils are described as fine to medium grain sand with trace amounts of silt and organic material. From 4 to 6 ft, the soils are described as clean sand with trace organics from 4 to 5 ft, and no organics from 5 to 6 ft. The water table was noted at 3.0 ft below ground surface. With an excavation depth of about 3.5 ft in the planted areas, surficial soils will consist of fine to medium grain sand with trace amounts of silt and organic material. With an excavation depth of about 4.5 ft in the unplanted areas, surficial soils will consist of fine to medium grain clean sand with trace amounts of organic material. However, hydric soils from the impacted wetlands will cover the soils in the unplanted areas.

d. *Hydrology. Describe in narrative and graphic forms how the site will connect to waters of the State.*

The mitigation wetland will adjoin an existing wetland that extends off site. As shown on the USGS Palm Valley 7.5 Minute quadrangle map, the existing wetland is part of a larger wetland system that extends to Pablo Creek about 3,000 ft north of DU-9.

Describe the proposed water source, referring to figures.

The primary sources of water for the mitigation site are rain, runoff and percolation, inflow from the adjacent wetland, and seasonal rises in the groundwater table.

Describe design water level (in NGVD): referencing proposed seasonal high water level (SHWL), seasonal low water level (SLWL), and normal water level (NWL).

Measured water levels are unavailable for this site. However, field observations indicate seasonal high water levels to be 6 to 8 in above ground surface in existing adjacent wetlands. The excavation plan for the mitigation area is designed to create ground elevations that will support similar seasonal hydrology.

5. *Protection proposed for mitigation site, such as easement, fencing, etc.*

A perimeter fence located around the entire DU-9 site will remain in place following mitigation. This fence will prohibit public access and protect the site from vandalism and illegal trash dumping.

6. *Exotic and nuisance species control proposed (when appropriate), including species, techniques, frequency, criteria and management, disposal methodology and location, and provide documentation of previous success.*

Exotic and nuisance species removal will occur in two stages. The first stage will involve the mechanical removal of exotic species within the mitigation site followed by recontouring and planting with native wetland vegetation. The second stage will involve the hand removal of exotic species followed by treatment with an appropriate herbicide in the area west of the western containment basin construction boundary and extending north and south to the site boundary and east about 150 ft beyond existing wetlands (see Figure 4). The removal effort will focus primarily on Chinese tallow (*Sapium sebiferum*), the most obvious exotic species observed during site inspections. Annual inspections following construction will determine the need for further removal of exotic species. If necessary following inspections, exotic vegetation will be removed by hand clearing and herbicide treatment.

7. *Full estimated cost of the mitigation project (include and itemize costs of land acquisition, earthmoving, planting, consultant fees, monitoring, and anticipated contingency work):*

N/A. State and federal agencies will perform this work.

$_____ (Note: mitigation proposals costing in excess of $25,000 will require a detailed breakdown of costs (which should be supplied as an attachment) and the posting of sufficient financial responsibility, except when the work is associated with a federal, state, county, municipal government, state political subdivision, an investor-owned utility regulated by the P.S.C., or a rural electric cooperative).

8. *No permit can be issued until the applicant has the full authority and ability to use the proposed mitigation site. Prior to initiating any dredging or filling, it is necessary that the permittee have suffcient legal interest in the mitigation site property described above for the period of time necessary to successfully complete the mitigation. This may consist of (check appropriate box):*

X *Fee title (provide copy)*
_____ *License or consent of use (provide copy)*
_____ *Lease or easement (provide copy)*
_____ *Written authorization from property owner (provide original, notarized affidavit of authorization, with copy of title).*

_____ *I am not the record owner, lessee, or record easement holder of the property described below, but I will have the requisite property interest in the mitigation site before a permit is issued for the proposed work*

(Please explain in detail what the interest will be and how it will be acquired).

ATTACH LEGAL DESCRIPTION OF PROPERTY ON WHICH PROJECT IS TO OCCUR.

Legal Description of Dredged Material Management Area DU-9

A PARCEL OF LAND LYING IN SECTIONS 19, 30, 39, AND 40, TOWNSHIP 3 SOUTH, RANGE 29 EAST, ST. JOHNS COUNTY, FLORIDA; BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

FOR A POINT OF REFERENCE, COMMENCE AT A NORTHWEST CORNER OF ST. JOHNS COUNTY, SAID POINT ALSO BEING ON THE WESTERLY LINE OF SECTION 38 INTERSECTED BY THE SOUTHERLY DUVAL COUNTY AND THE NORTHERLY ST. JOHNS COUNTY LINE; THENCE SOUTH 00°37'25" EAST ALONG THE WESTERLY LINE OF SAID ST. JOHNS COUNTY LINE, RANGE 29 EAST AND THE EASTERLY LINE OF DUVAL COUNTY, RANGE 28 EAST, A DISTANCE OF 1271.86 FEET TO A SIX (6) INCH ROUND CONCRETE AND BRASS CAP MONUMENT, (DUVAL/ST. JOHNS, GHH/JED AS NOTED); THENCE SOUTH 00°37'35" EAST, A DISTANCE OF 1400.05 FEET TO A FOUR (4) BY FOUR (4) INCH CONCRETE MONUMENT, (LB# 1048 AS NOTED); THENCE SOUTH 00°37'48" EAST, A DISTANCE OF 2070.72 FEET TO A HALF(1/2) INCH IRON PIPE, (LB# 1048 AS NOTED); THENCE SOUTH 00°36'54" EAST, A DISTANCE OF 201.03 FEET TO A SIX (6) INCH ROUND CONCRETE AND BRASS DISK MONUMENT, (DUVAL/ST. JOHNS JED AS NOTED); THENCE SOUTH 00°37'38" EAST, A DISTANCE OF 227.19 FEET TO A FOUR (4) BY FOUR (4) INCH CONCRETE MONUMENT, (LB# 3624 AS NOTED); THENCE SOUTH 00°36'27" EAST, A DISTANCE OF 148.42 FEET TO A HALF (1/2) INCH IRON PIPE; THENCE SOUTH 01°00'32" EAST, A DISTANCE OF 3330.60 FEET TO A POINT ON SAID WESTERLY LINE OF ST. JOHNS COUNTY, RANGE 29 EAST AND THE EASTERLY LINE OF DUVAL COUNTY, RANGE 28 EAST; THENCE NORTH 76°11'25" EAST DEPARTING FROM SAID COUNTY LINE, A DISTANCE OF 1409.57 FEET TO THE POINT OF BEGINNING;

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OFFICIAL RECORDS BOOK 208, PAGE 578-582

Source: Boundary Survey Performed by St. John's Survey Company
Project No. 250-021 Revision B
7/8/94

DU-9

FORM #: ( )00 (1)
FORM TITLE: JOINT ENVIRONMENTAL RESOURCE PERMIT APPLICATION
DATE: October 3, 1995

TABLE 1 (Page 1 of 2)

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9	621	0.788	0	0.788	F/H			
PROJECT TOTALS:								

WL = Wetland; **SW** = Surface water; **ID** = Identification number, letter, etc.
Wetland Type: Use an established wetland classification system and, in the comments section below, indicate which classification system is being used.
Impact Code (Type): D = dredge; F = fill; H = change hydrology; S = shading; C = clearing; O = other. Indicate the final impact if more than one impact type is proposed in a given area. For example, show F only for an area that will first be demucked and then backfilled.

Note: Multiple entries per cell are not allowed, except in the "Mitigation ID" column. Any given acreage of wetland should be listed in one row only, such that the total of all rows equals the project total for a given category (column). For example, if Wetland No. 1 includes multiple wetland types and multiple impact codes are proposed in each type, then each proposed impact in each wetland type should be shown on a separate row, while the size of each wetland type found in Wetland No. 1 should be listed in only one row.

Comments: Wetland type classified according to Florida Land Use, Cover, and Forms Classification -- 615 = Stream and Lake Swamp 621 = Cypress, 641 = Freshwater Marsh, 643 = Wet Prairie. Wetland areas from COE Wetland Jurisdictional Survey, File No. 8E-37,788. Wetland types from "Environmental Site Documentation for Dredged Material Disposal Areas in St. Johns County - Pablo Creek Alternative 2 Site (Extended Southerly)", Water and Air Research, Inc., 1992.

FORM #: [illegible] 300 (1)
FORM TITLE: JOINT ENVIRONMENTAL RESOURCE PERMIT APPLICATION
DATE: October 3, 1995

TABLE 1 (Page 2 of 2)
PROJECT IMPACT SUMMARY

WL & SW ID	WL & SW TYPE	WL & SW SIZE (AC.) ON SITE	WL & SW (AC.) NOT IMPACTED	PERMANENT WL & SW IMPACTS		TEMPORARY WL & SW IMPACTS		MITIGATION ID
				IMPACT SIZE	IMPACT	IMPACT	IMPACT	
10	621	0.308		0.308	F/H			
11	611	0.240		0.240	F			
PROJECT TOTALS:				3.128				

WL = Wetland; SW = Surface water; ID = Identification number, letter, etc.
Wetland Type: Use an established wetland classification system and, in the comments section below, indicate which classification system is being used.
Impact Code (Type): D = dredge; F = fill; H = change hydrology; S = shading; C = clearing; O = other. Indicate the final impact if more than one impact type is proposed in a given area. For example, show F only for an area that will first be demucked and then backfilled.

Note: Multiple entries per cell are not allowed, except in the "Mitigation ID" column. Any given acreage of wetland should be listed in one row only, such that the total of all rows equals the project total for a given category (column). For example, if Wetland No. 1 includes multiple wetland types and multiple impact codes are proposed in each type, then each proposed impact in each wetland type should be shown on a separate row, while the size of each wetland type found in Wetland No. 1 should be listed in only one row.

Comments:_____

Table 2. Species to be Planted in DU-9 Mitigation Area

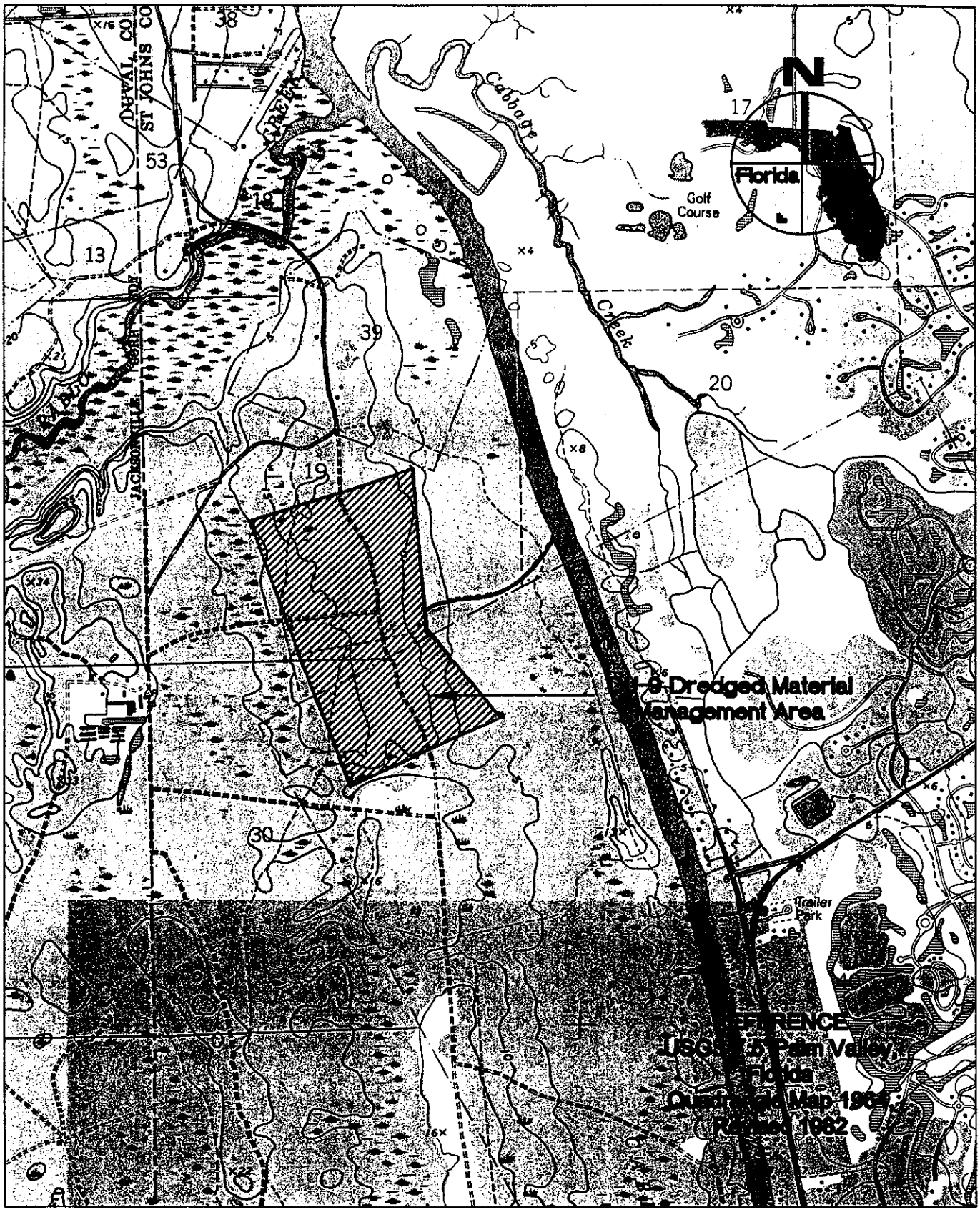
Common Name	Scientific Name	Plant Size	Range of Elevation [1, 2]	Density [3]	Source [4]
Bald cypress	*Taxodium distichum*	4 – 6'	+13.5 – 14.5'	110	Nursery
Pond cypress	*Taxodium ascendens*	4 – 6'	+13.5 – 14.0'	110	Nursery
Red maple	*Acer rubrum*	4 – 6'	+13.5 – 14.5'	50	Nursery
Swamp tupelo	*Nyssa sylvatica var. biflora*	4 – 6'	+13.5 – 14.5'	100	Nursery
Loblolly bay	*Gordonia lasianthus*	4 – 6'	+13.5 – 14.5'	40	Nursery
Swamp bay	*Persea palustris*	4 – 6'	+13.5 – 14.0'	40	Nursery

[1] Planting elevations referenced to NGVD

[2] Specific planting elevations to be field determined

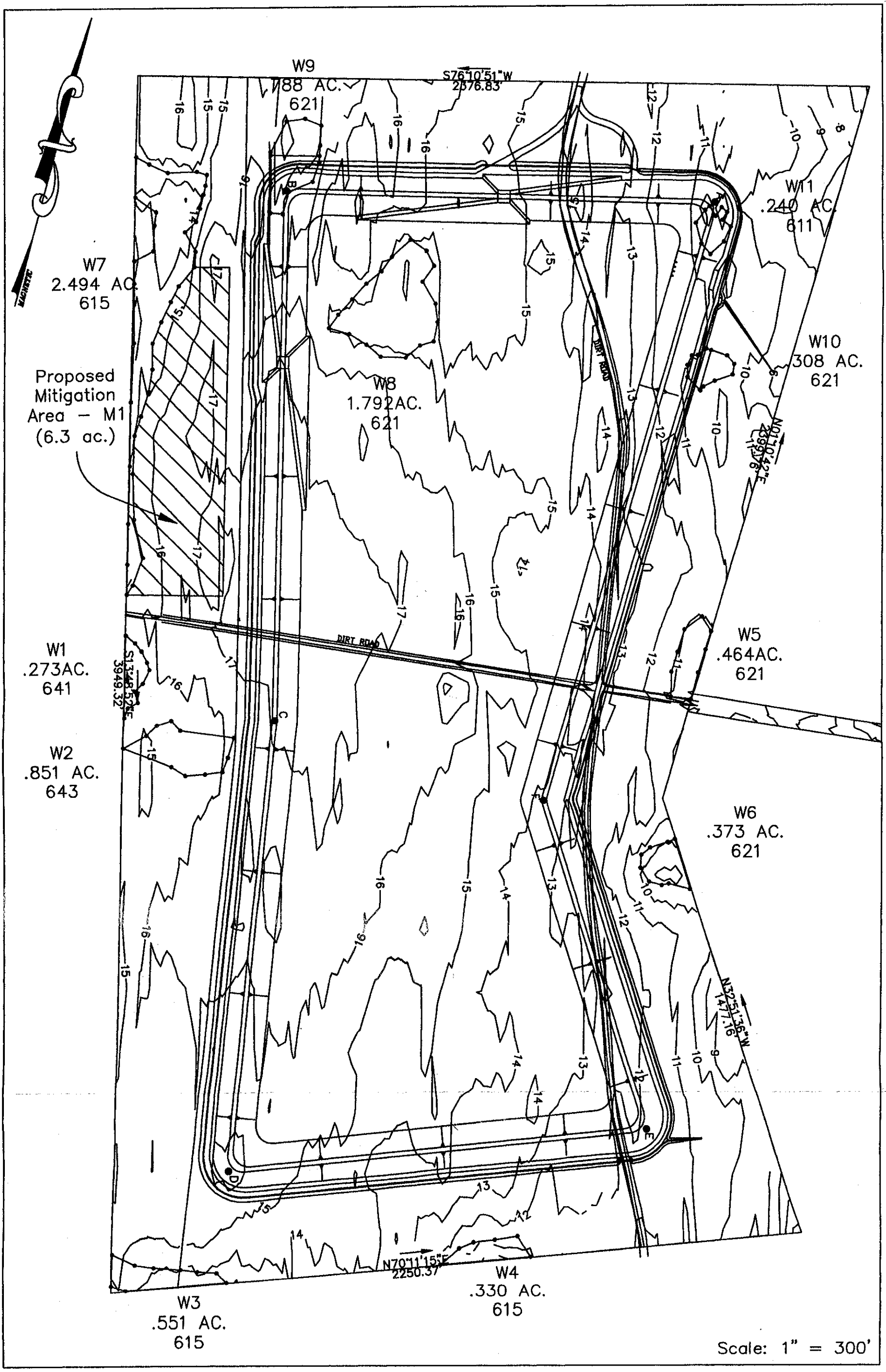
[3] Planting density in terms of plants per acre

[4] Plant nursery to be determined by contractor



Scale: 1" = 2000"

TAYLOR ENGINEERING INC. 9000 CYPRESS GREEN DRIVE, SUITE 200 JACKSONVILLE, FLORIDA 32256	Figure 1 Location of DU-9 Dredged Material Management Area St. Johns County, Florida	PROJECT C9832 REVISION SHEET DATE Dec. 1999



TAYLOR ENGINEERING INC.
9000 CYPRESS GREEN DRIVE, SUITE 200
JACKSONVILLE, FLORIDA 32256

Figure 2
Wetlands and Proposed Mitigation
on DU–9 Dedged Material Management Area

PROJECT C9832
DRAWN BY
SHEET
DATE Dec. 1999

W7
108,629.53 Sq.Ft.
2.494 AC.

Dike

Slope
5H:1V

Proposed Mitigation
Area - M1
Limit of Grading

Planting Elevation 13.50 - 14.50
Post-Mucking Bottom
Elev. 13.50±
Area = 6.30 Acre

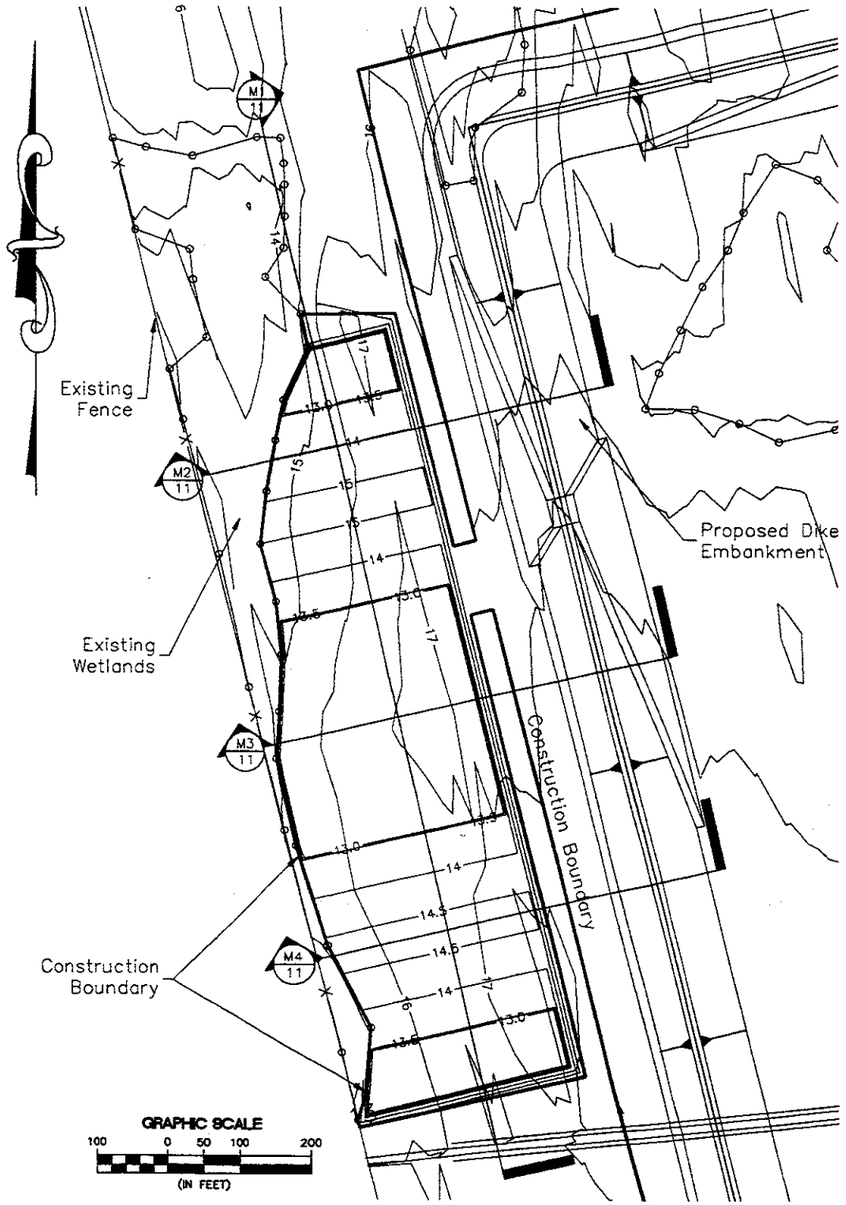
Graphic Scale
100 0 50 100 200
(in feet)

MAGNETIC

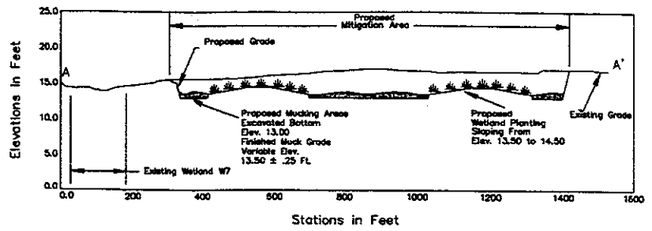
Figure 3
PlanView
of DU-9 Mitigation Area

PROJECT C9832
DRAWN BY J.A.
DATE Oct., 1999

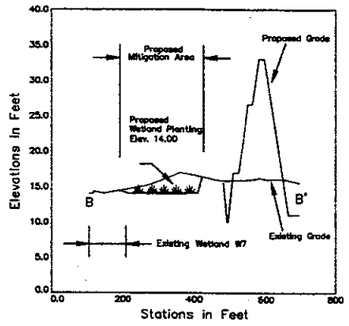
TAYLOR ENGINEERING INC.
8000 CYPRESS GREEN DRIVE, SUITE 200
JACKSONVILLE, FLORIDA 32256



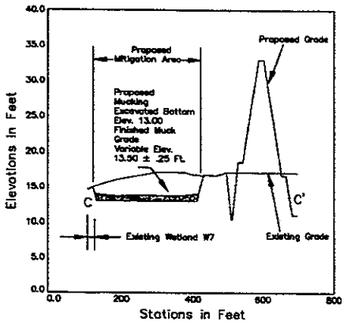
Mitigation Grading Plan



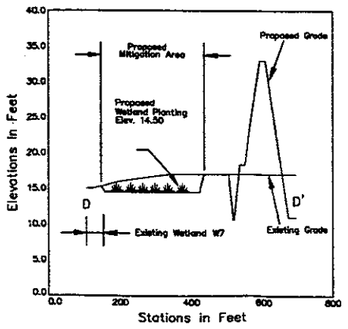
M1 / 11 — Mitigation Section 1



M2 / 11 — Mitigation Section 2



M3 / 11 — Mitigation Section 3



M4 / 11 — Mitigation Section 4

Mitigation Planting Schedule

Common Name	Scientific Name	Elevation[1, 2] Range	Number of Plants
Bald Cypress	*Taxodium distichum*	+13.5–14.5'	360
Pond Cypress	*Taxodium ascendens*	+13.5–14.0'	360
Red Maple	*Acer rubrum*	+13.5–14.5'	165
Swamp Tupelo	*Nyssa sylvatica var. biflora*	+13.5–14.5'	330
Loblolly Bay	*Gordonia lasianthus*	+13.5–14.5'	130
Swamp Bay	*Persea palustris*	+13.5–14.0'	130

1. Planting elevations referenced to NGVD 1929.
2. Specific planting elevations to be field determined.

Notes

1. Planting covers 50% of mitigation area.
2. All tree saplings 4'–6' in size.
3. All saplings planted on 10' centers.

GENERAL NOTES

1. Horizontal coordinates based on NAD 27, FL East Zone.
2. Elevations referenced to NGVD 29.
3. Transition slopes from existing ground to the mitigation area should be no steeper than 5H: 1V

LEGEND

No	Revisions / Submissions	Date

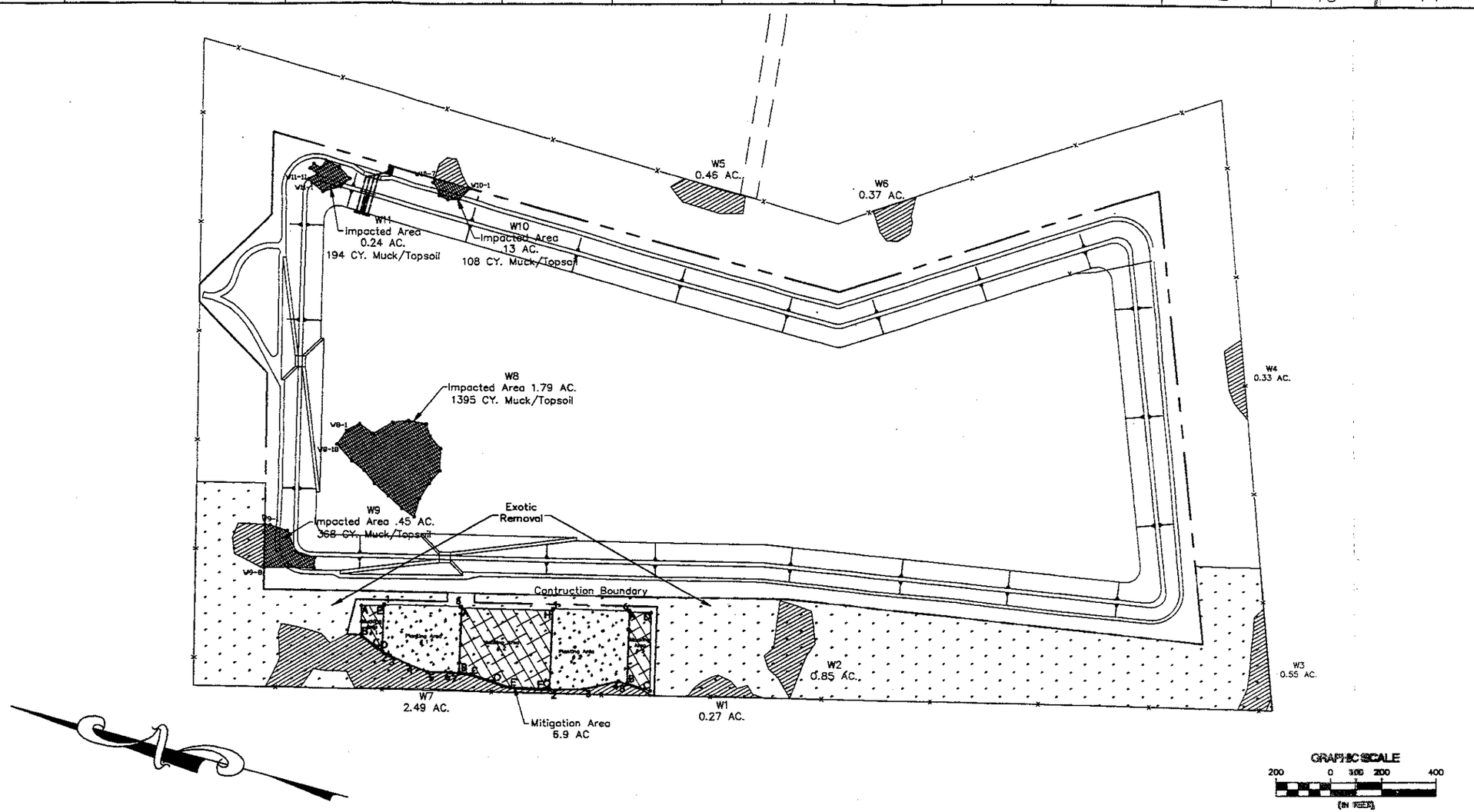
TAYLOR ENGINEERING INC.
9000 CYPRESS GREEN DRIVE, SUITE 200
JACKSONVILLE, FLORIDA 32256

DU-9 Dredged Material Management Area

DRAWING TITLE
Proposed Mitigation Area, Grading and Sections

DESIGNED KK / JA	PROJECT NO C9832
DRAWN PEW	SCALE As Shown
CHECKED KK / JA	DRAWING NO Fig. 3
REVIEWED MLC	
DATE DEC. 1999	

SEAL — Michael L. Contreras P.E. 51331



GRAPHIC SCALE
200 0 100 200 400
(IN FEET)

GENERAL NOTES

1. Horizontal coordinates based on NAD 27, Fl. East Zone.
2. Elevations referenced to NGVD 29.
3. The Contractor shall remove 6 inches of muck/topsoil from the impacted wetlands and distribute evenly in the proposed mucking areas.
4. The Contractor shall mulch the planted areas with approximately 3 inches of chipped vegetation from the impacted wetlands.

LEGEND

- Planting Area
- Mucking Area
- Impacted Wetlands
- Unimpacted Wetlands
- Exotic Removal

No	Revisions / Submissions	Date

TAYLOR ENGINEERING INC.
9000 CYPRESS GREEN DRIVE, SUITE 200
JACKSONVILLE, FLORIDA 32256

DU-9 Dredged Material Management Area

Proposed Mitigation Area, Planting, Mucking and Exotic Removal

DESIGNED	KK / JA
DRAWN	PEW
CHECKED	KK / JA
REVIEWED	MLC
DATE	DEC. 1999
PROJECT NO	C9832
SCALE	As Shown
DRAWING NO	Fig. 4

Milford L. Crabtree P.E. 51331

Wetland #8		
#	Northing	Easting
1	2143094.40	364512.07
2	2143054.86	364548.71
3	2142996.04	364525.50
4	2142936.42	364584.44
5	2142879.94	364607.01
6	2142815.87	364610.65
7	2142791.70	364571.47
8	2142742.63	364537.33
9	2142724.86	364457.86
10	2142750.42	364402.18
11	2142769.85	364339.19
12	2142770.85	364270.26
13	2142821.10	364288.45
14	2142882.07	364319.03
15	2142943.45	364350.32
16	2142994.97	364387.25
17	2143047.76	364408.49
18	2143116.27	364453.29

Wetland #9		
#	Northing	Easting
1	2143264.68	363943.86
2	2143281.54	364102.13
3	2143214.53	364098.13
4	2143164.83	364032.33
5	2143090.10	364029.79
6	2143083.34	363990.64
7	2143176.90	363968.15
8	2143302.43	364097.94

Wetland #10		
#	Northing	Easting
1	2143018.91	365490.67
2	2142913.89	365439.46
3	2142952.06	365428.89
4	2142986.54	365434.89
5	2142992.15	365452.93
6	2143019.87	365474.76
7	2142884.39	365488.85

Wetland #11		
#	Northing	Easting
1	2143451.33	365354.16
2	2143404.03	365334.56
3	2143343.42	365369.84
4	2143319.32	365406.93
5	2143368.71	365438.77
6	2143421.42	365447.49
7	2143434.85	365415.33
8	2143462.21	365424.49
9	2143472.44	365404.22
10	2143441.13	365391.50
11	2143466.42	365364.69

Mucking Area # 1		
#	Northing	Easting
A	2142876.70	363904.04
B	2142851.44	363801.28
C	2142779.85	363769.41
D	2142761.37	363765.60
E	2142797.12	363923.67

Mucking Area # 2		
#	Northing	Easting
A	2142519.58	363992.11
B	2142467.70	363762.29
C	2142423.45	363766.12
D	2142342.30	363762.42
E	2142276.74	363758.22
F	2142155.14	363784.56
G	2142136.11	363790.71
H	2142199.21	364071.11

Mucking Area # 3		
#	Northing	Easting
A	2141922.36	364139.38
B	2141864.84	363884.63
C	2141776.44	363878.16
D	2141845.53	364158.33

Planting Area # 1		
#	Northing	Easting
1	2142795.36	363929.25
2	2142757.47	363759.68
3	2142724.65	363752.90
4	2142652.87	363740.18
5	2142578.66	363730.94
6	2142497.31	363752.97
7	2142468.87	363756.10
8	2142523.51	363996.29

Planting Area # 2		
#	Northing	Easting
1	2142197.90	364076.64
2	2142132.49	363786.03
3	2142013.06	363821.28
4	2141897.56	363882.47
5	2141866.30	363879.74
6	2141925.89	364143.66